



"User-Constrained Optical Route Flooding
System and Method"
Applicant: Guo Qiang Wang
Application No. 09/892,569
Attorney Docket No. 57983.000037

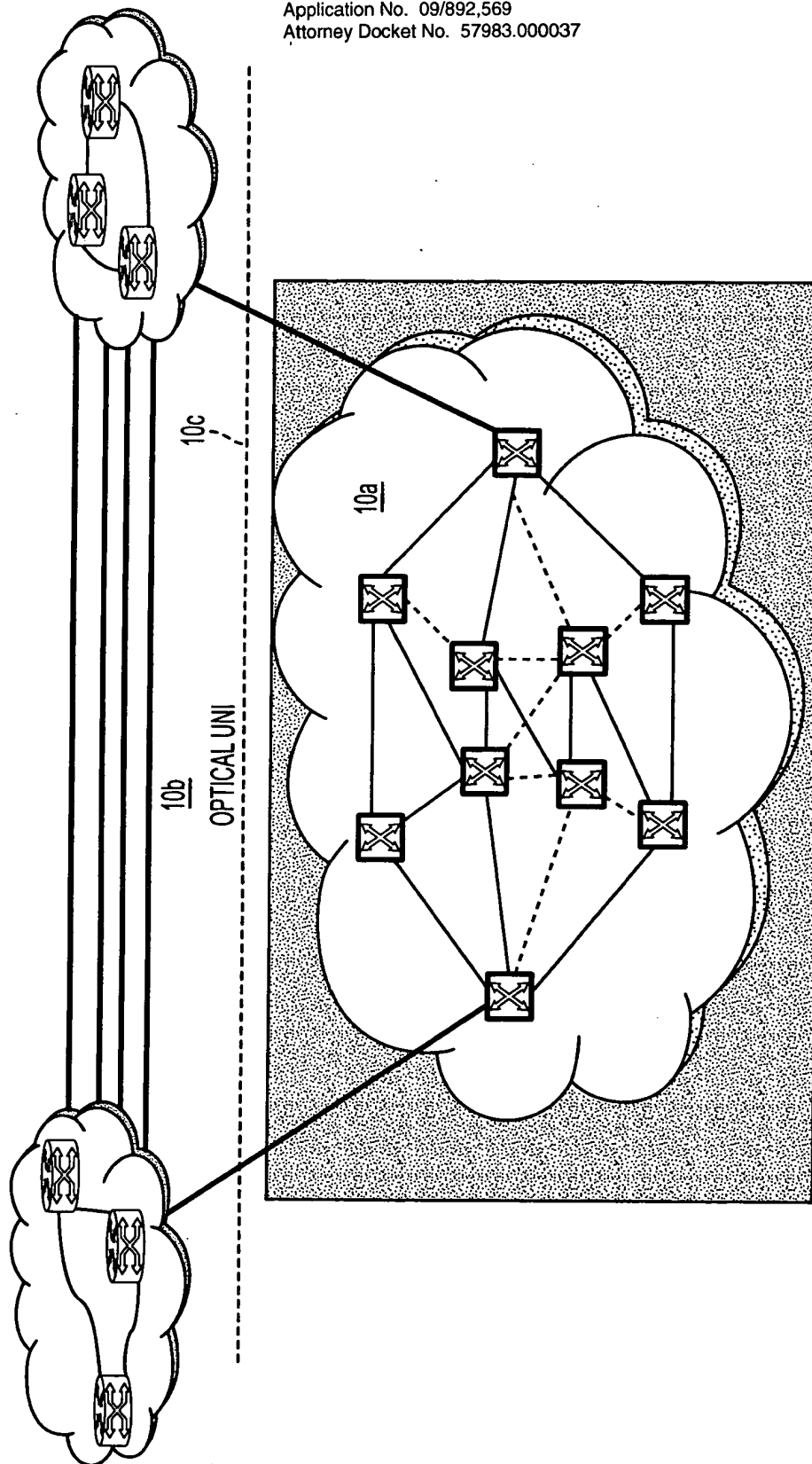


FIG. 1A



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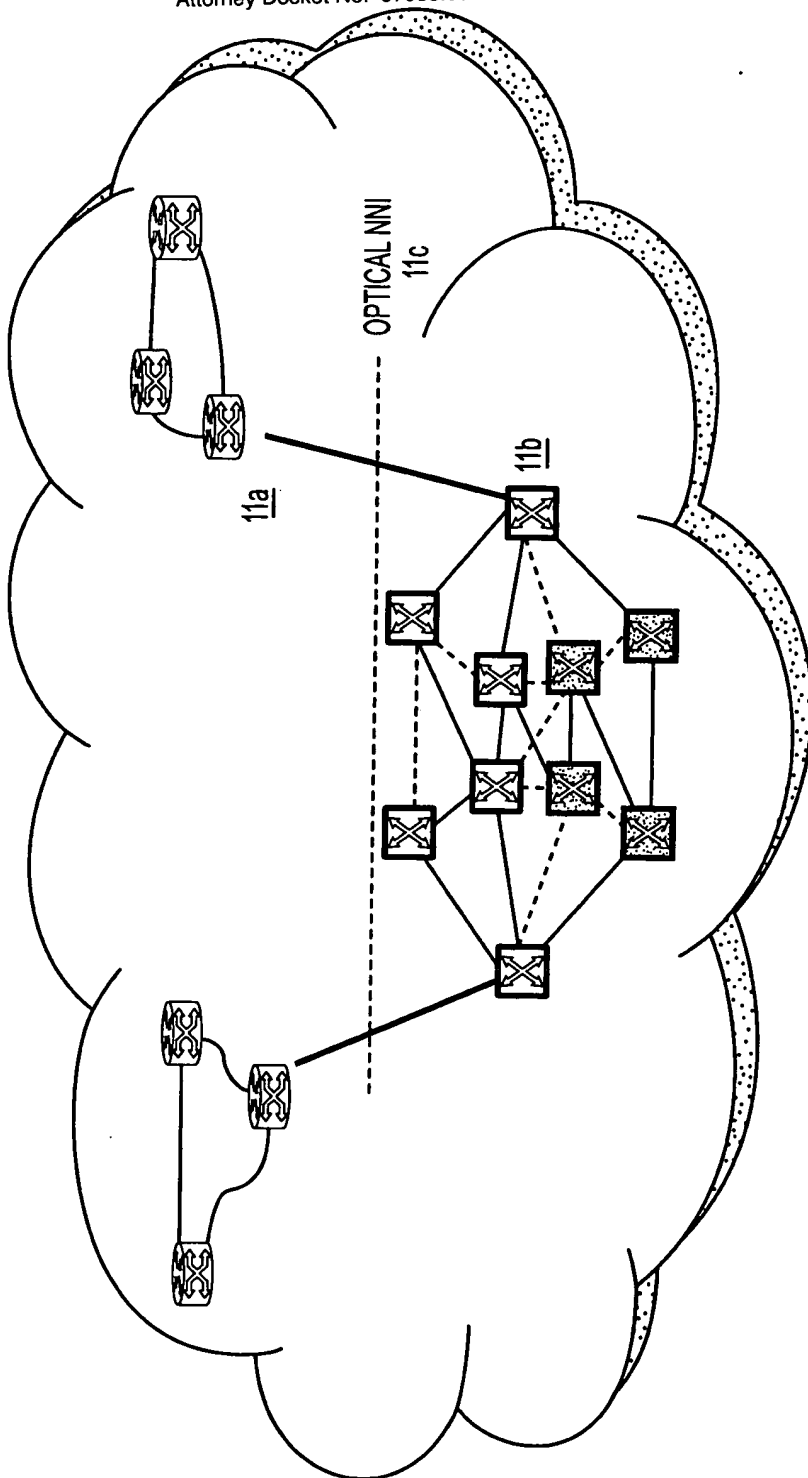


FIG. 1B



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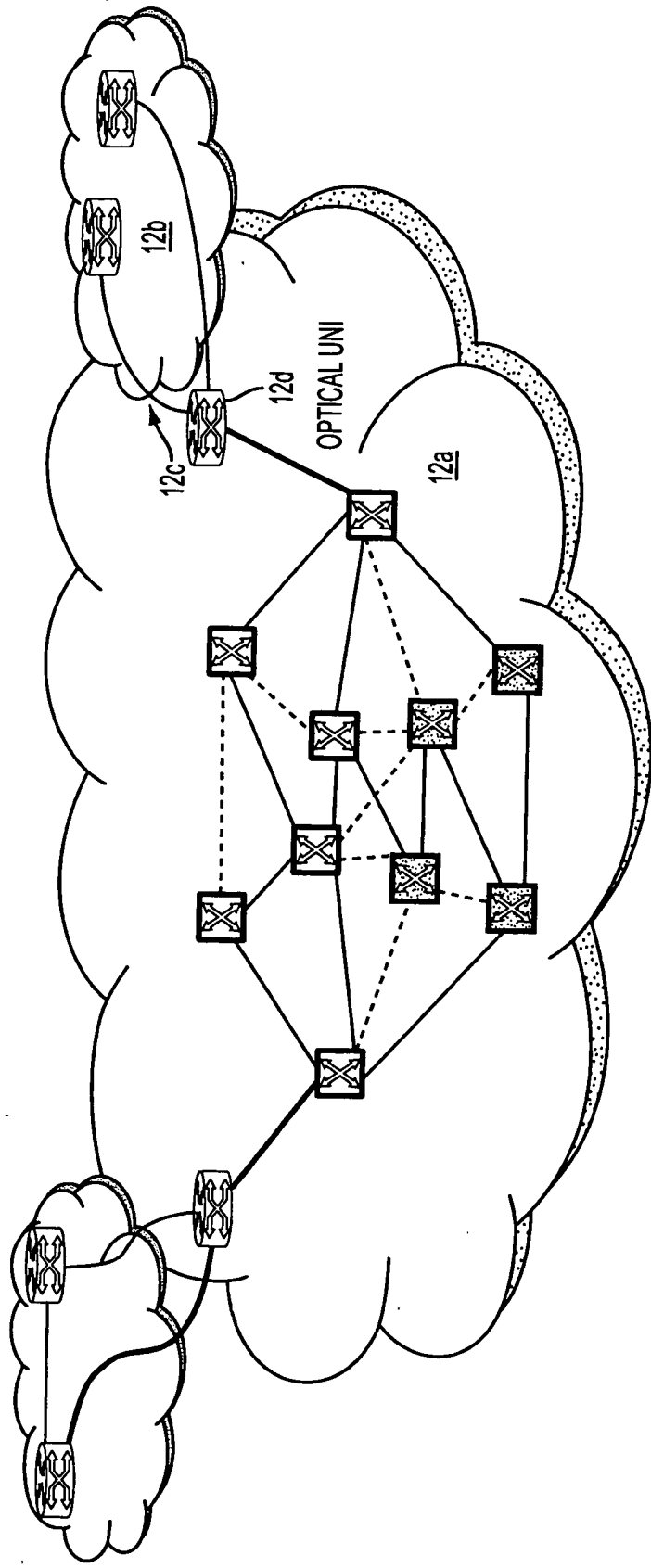


FIG. 1C



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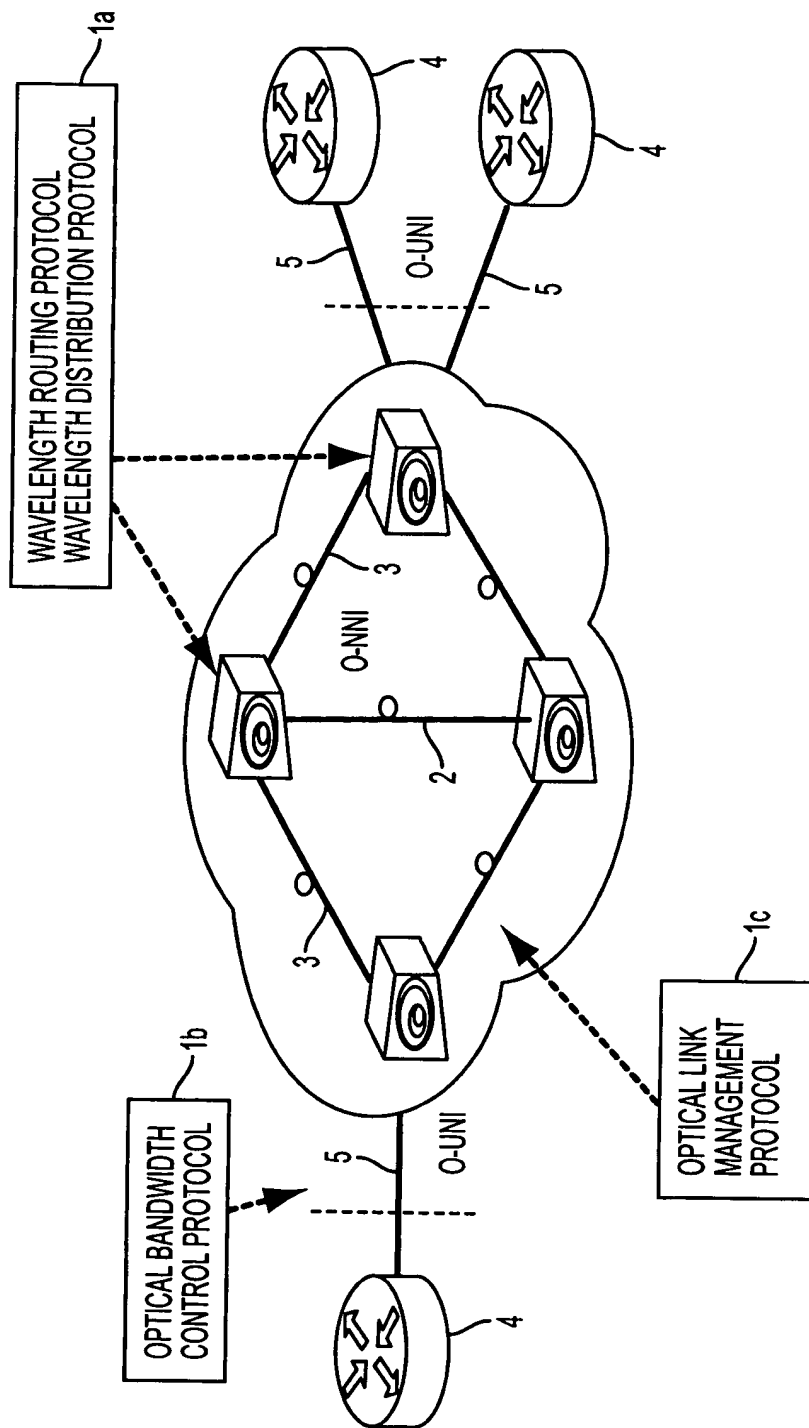


FIG. 2

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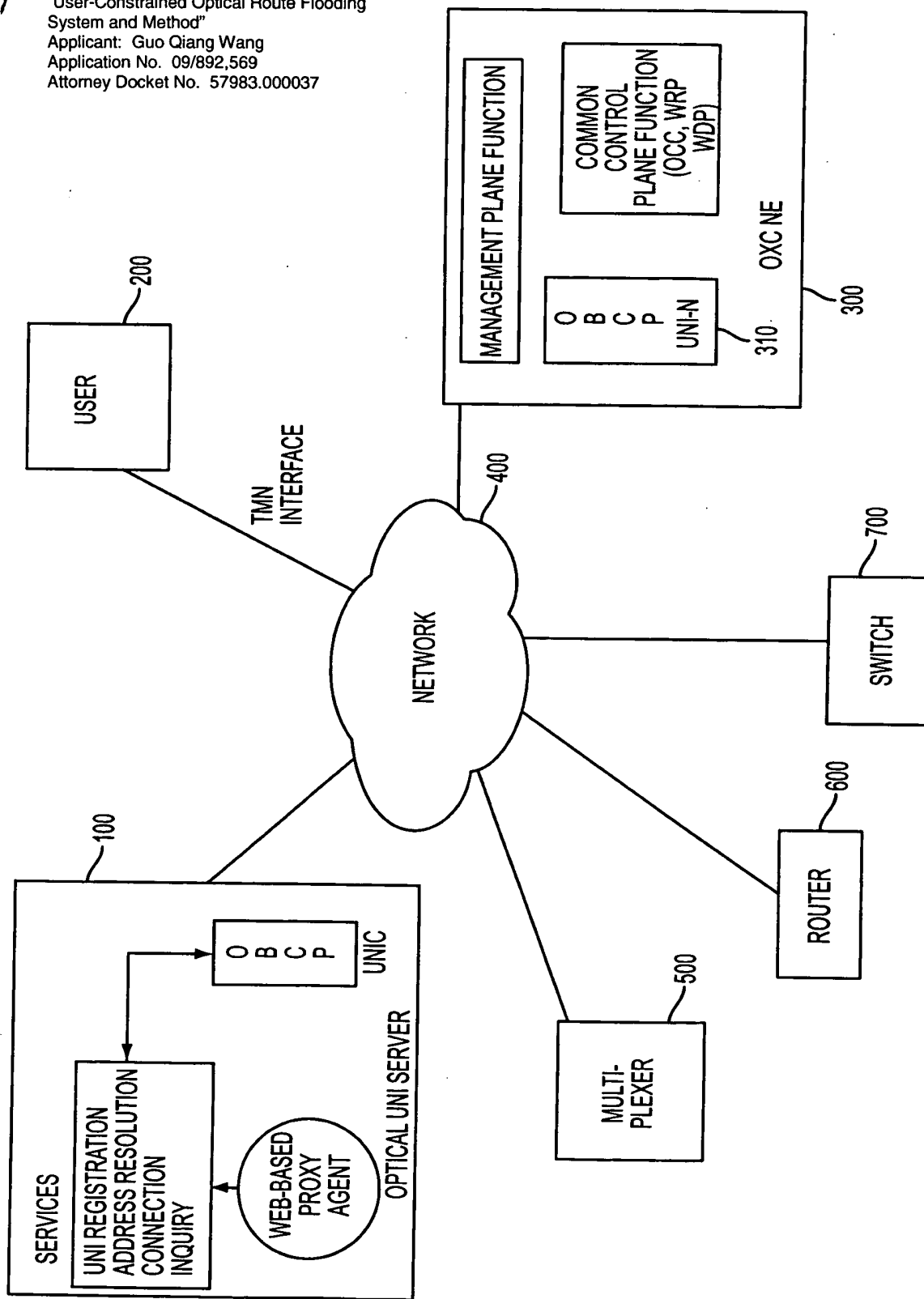


FIG. 3



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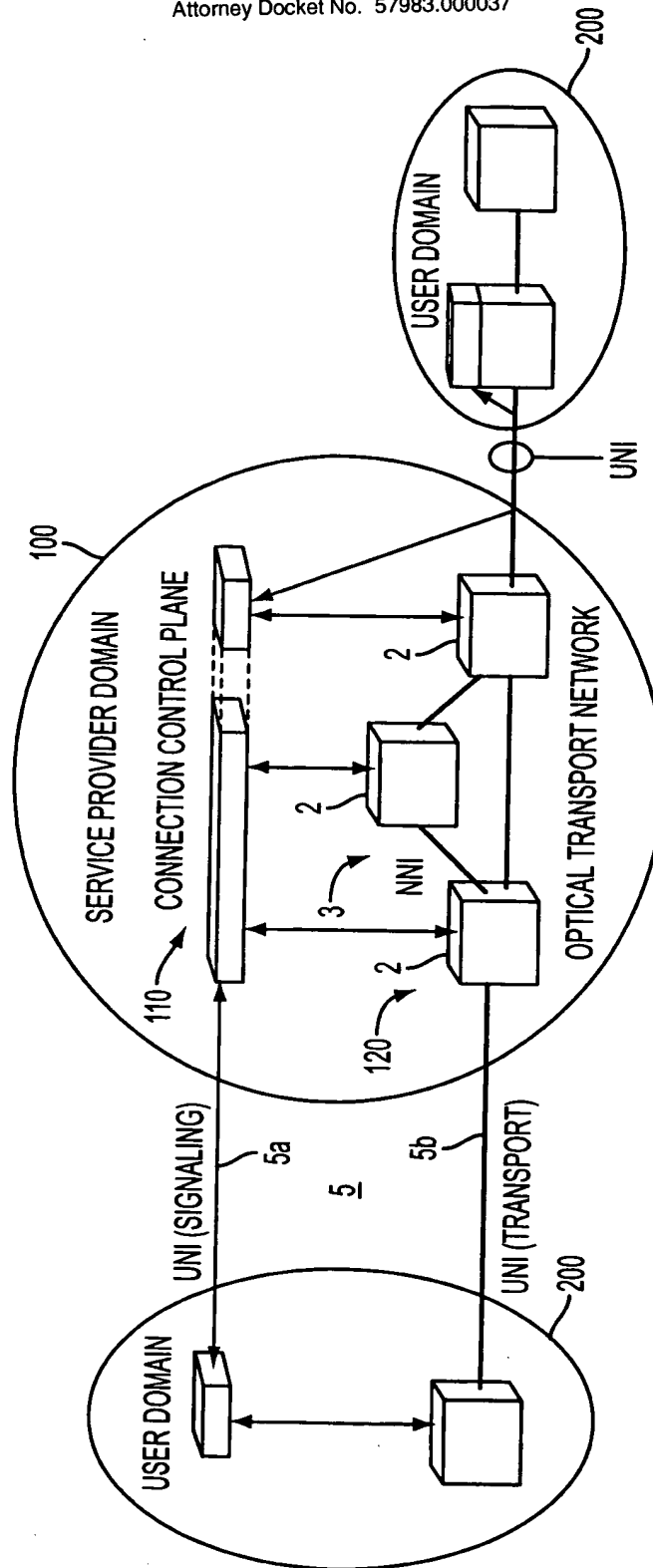
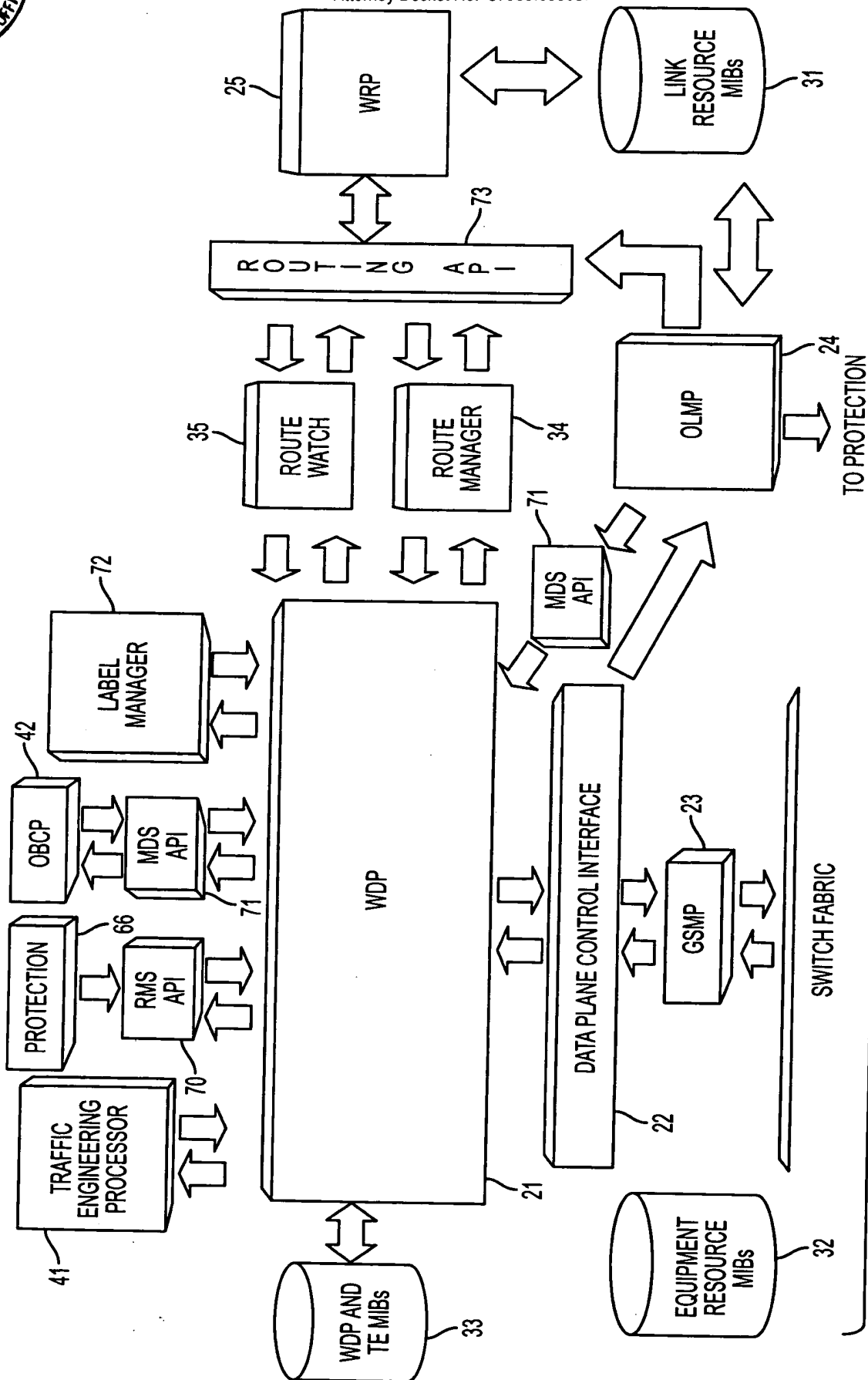
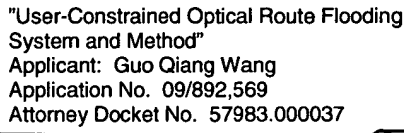


FIG. 4





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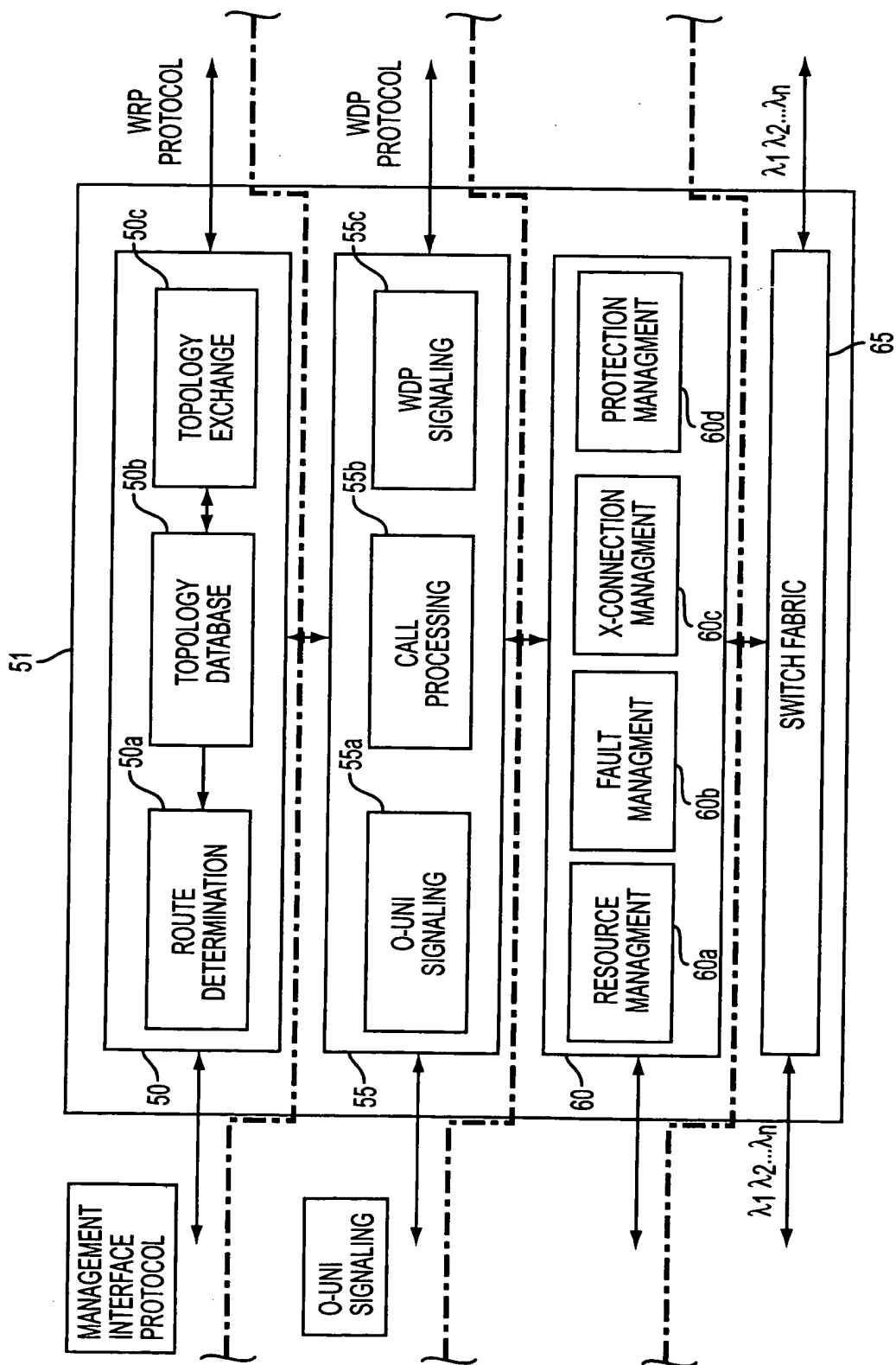


FIG. 6



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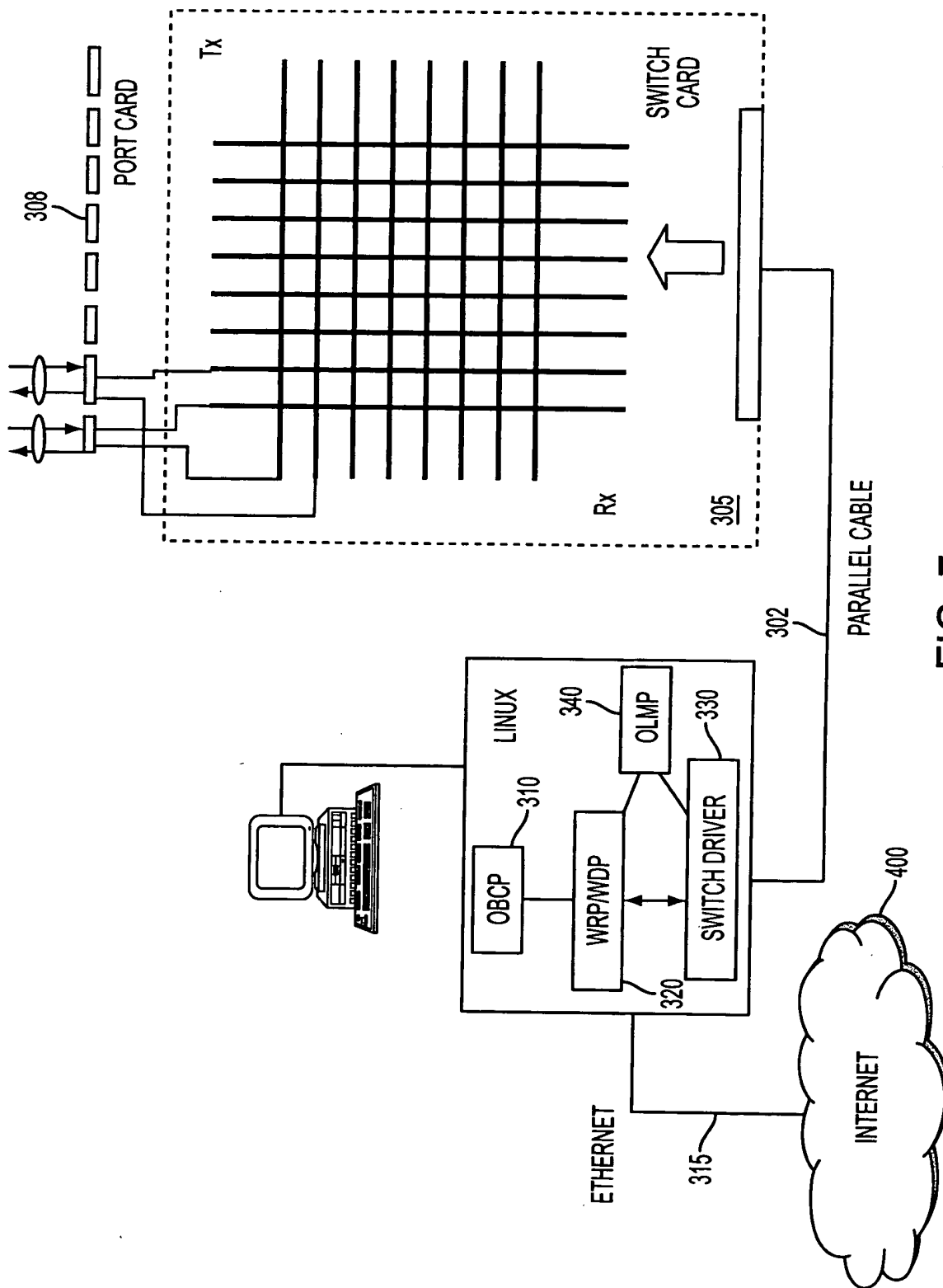


FIG. 7



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OPTICAL INTERFACE DESCRIPTOR <u>110</u>	USER TERMINATION POINT <u>112</u>
	USER GROUP ID <u>114</u>
	USER CONTRACT ID <u>116</u>
	USER SERVICE MODE <u>118</u>
OPTICAL LINK ADMINISTRATIVE DOMAIN <u>120</u>	CUSTOMIZED-LINK RELATED (LINK COLOR) <u>122</u>
	BROADCAST <u>123</u>
	BLOCK (DEFAULT) <u>124</u>
	OPTICAL INTERFACE DESCRIPTOR <u>125</u>
SERVICE LSA <u>130</u>	OPTICAL INTERFACE DESCRIPTOR TLV <u>132</u> INCLUDING
	USER SERVICE TYPE (ATM, IP, ETC.)
	CONTROL PROTOCOL (BGP, PNNI, ETC.)
	FRAMING PROTOCOL (GE, OX-c, FIBER CHANNEL, ETC., LINK COLOR)
	LINK COLOR
	OPTICAL INTERFACE DESCRIPTOR

FIG. 8

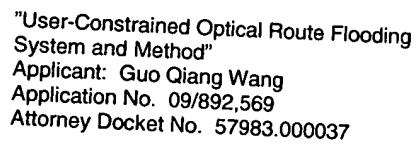


FIG. 9



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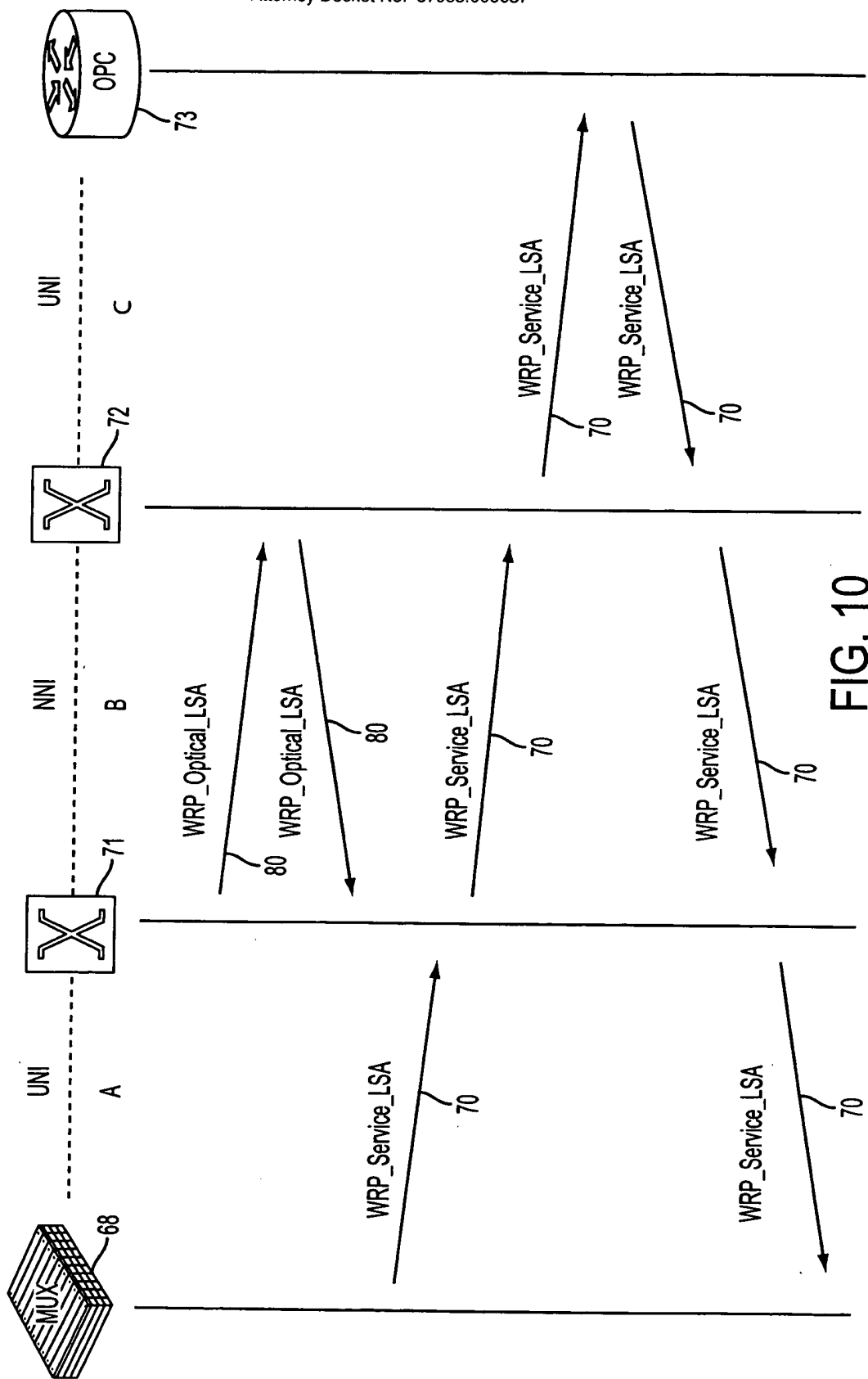


FIG. 10



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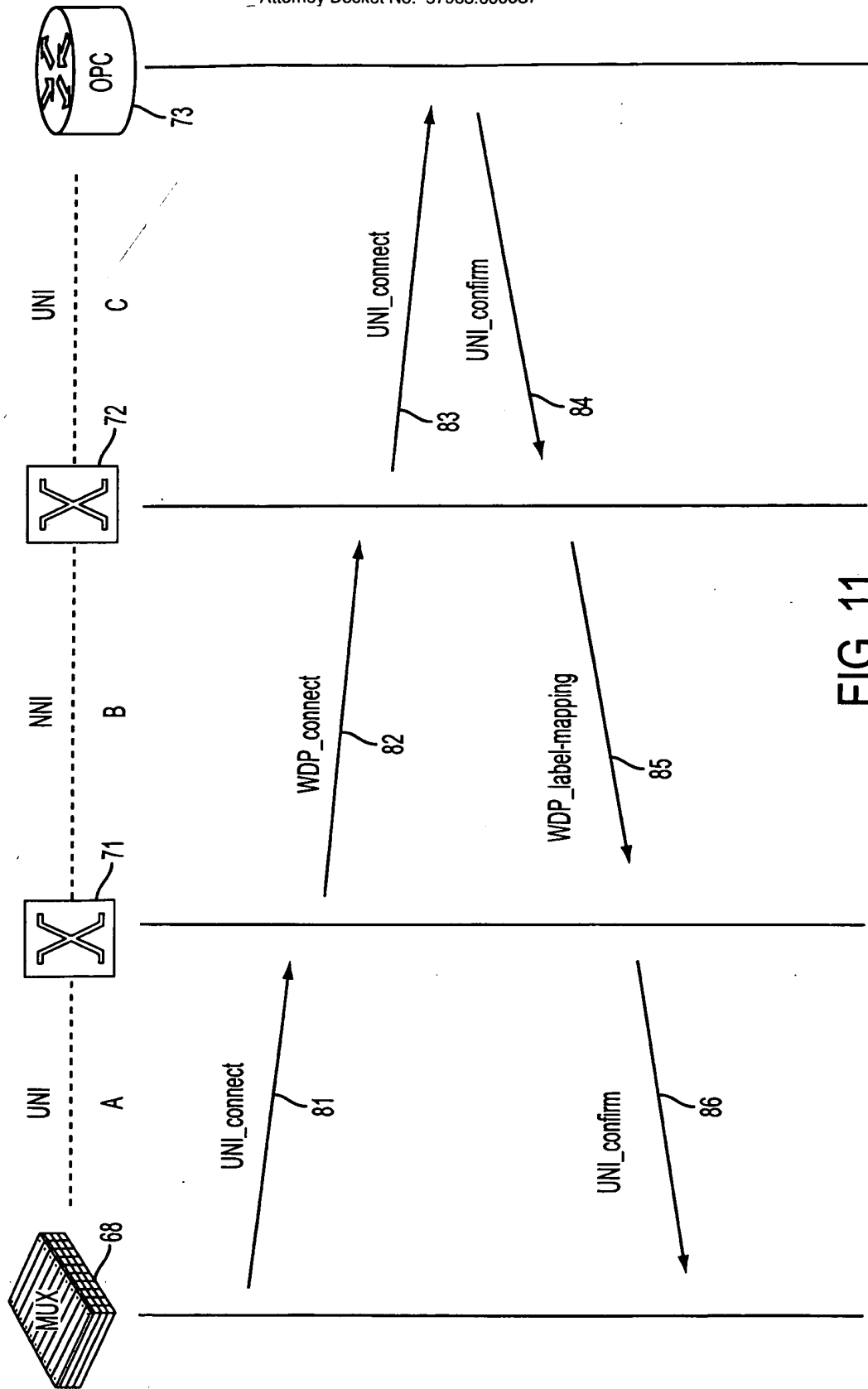


FIG. 11

FIG. 12



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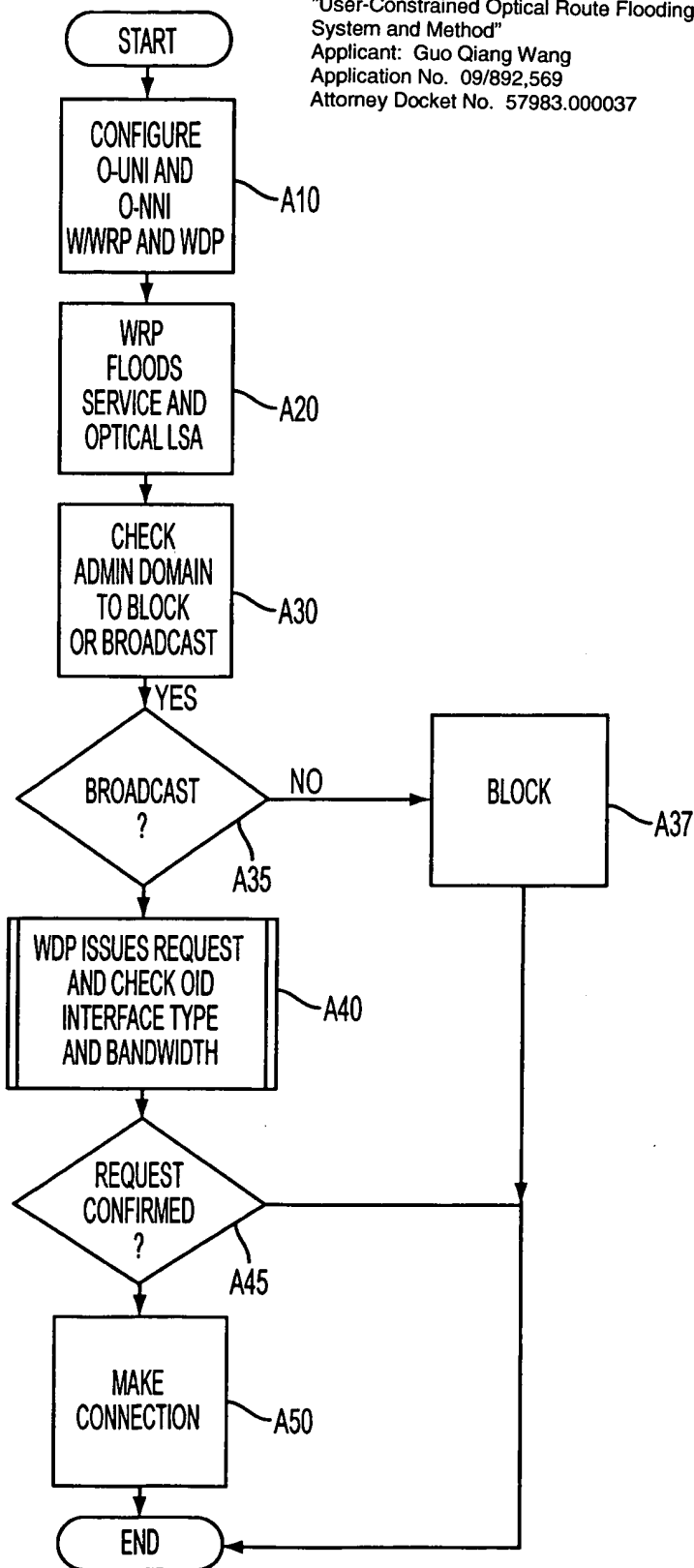


FIG. 13



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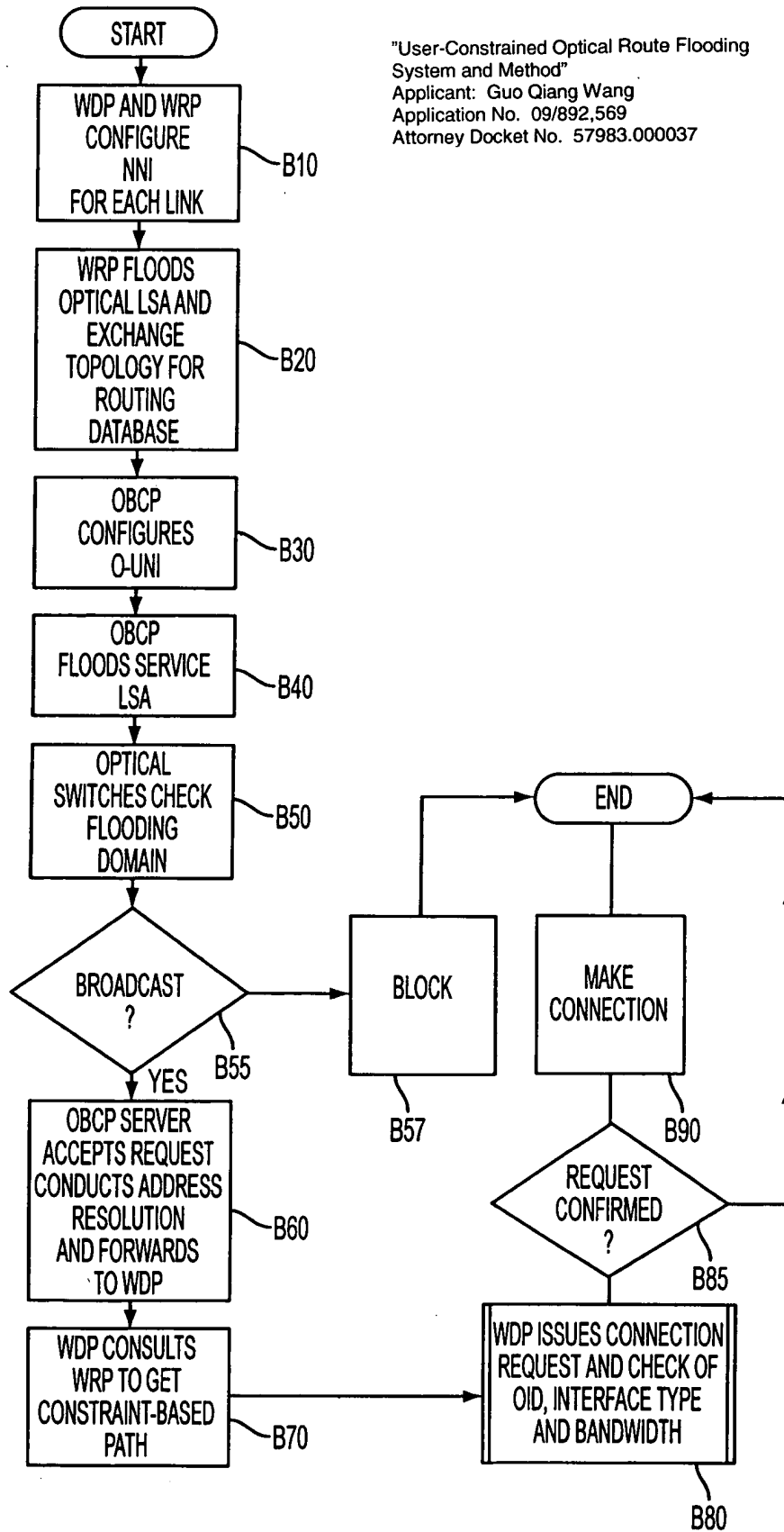


FIG. 14



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SERVICE MODE <u>A</u>	SERVICE LSA <u>B</u>	OPTICAL LSA <u>C</u>	OTHER LSA <u>D</u>
NONE (0) <u>A0</u>	BLOCK <u>B0</u>	BLOCK <u>C0</u>	BLOCK <u>D0</u>
OVERLAY MODE (1) <u>A1</u>	FLOODING <u>B1</u>	BLOCK <u>C1</u>	BLOCK <u>D1</u>
AUGMENTED MODE (2) <u>A2</u>	FLOODING <u>B2</u>	FLOODING <u>C2</u>	BLOCK <u>D2</u>
PEER-TO-PEER MODE (3) <u>A3</u>	FLOODING <u>B3</u>	FLOODING <u>C3</u>	FLOODING <u>D3</u>

FIG. 15



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500

User Name	<input type="text" value="Mike"/>	501
User Password	<input type="password" value="*****"/>	502
UNI Server	<input type="text" value="Kanata"/> <input type="button" value="v"/>	503
<input type="button" value="OK"/>		504
<input type="button" value="Cancel"/>		505

FIG. 16



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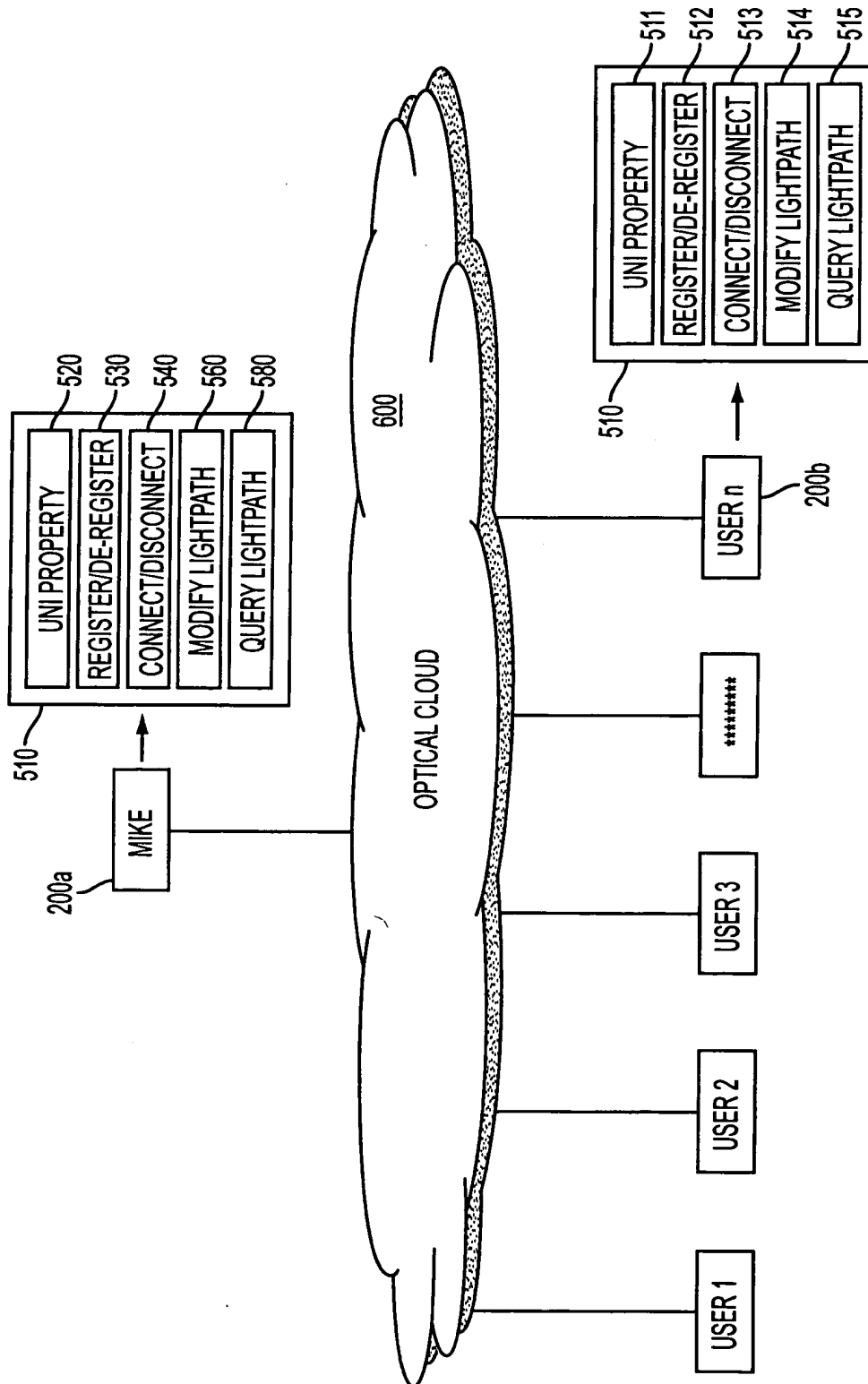


FIG. 17



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520

User Name: Mike

User ID	47.25.110.10 521	User Group	33.22.67 522
Node Address	47.25.111.1 523	Port Id	6 524
Channel ID	48 525	Sub-channel Id	56 526
Contract ID	1234567890 527	Directionality	Bi-directional 528
Service Type	Ethernet 529	Bandwidth	10G 530

OK 531

Cancel 532

- ↑
- UNI PROPERTY

REGISTER/DE-REGISTER

CONNECT/DISCONNECT

MODIFY LIGHTPATH

QUERY LIGHTPATH

FIG. 18



520

User Name: Mike

User ID	47.25.110.10 521	User Group	33.22.67 522
Node Address	47.25.111.1 523	Port ID	6 524
Channel ID	48 525	Sub-channel ID	56 526
Contract ID	1234567890 527	Directionality	Bi-directional 528
Service Type	ETHERNET 529	Bandwidth	10G 530

Register 533

De-register 534

- UNI PROPERTY
- REGISTER/DE-REGISTER
- CONNECT/DISCONNECT
- MODIFY LIGHTPATH
- QUERY LIGHTPATH

FIG. 19



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UNI PROPERTY

REGISTER/DEREGISTER

CONNECT/DISCONNECT

MODIFY LIGHTPATH

QUERY LIGHTPATH

Destination User ID

47.25.110.11

47.25.111.21

47.28.10.1

55.25.45.67

101.25.233.201

Source Node: 47.25.110.10

Destination Node: 47.25.111.21

Bandwidth

Link Type

Signaling Type

10 G

Ethernet

On-demand /Scheduled

Protection

Max. Delay

Starting Time

Duration

Gold

10ms

Minute/hour Dd/mm/yy

Minute/hour Dd/mm/yy

OK

Cancel

FIG. 20



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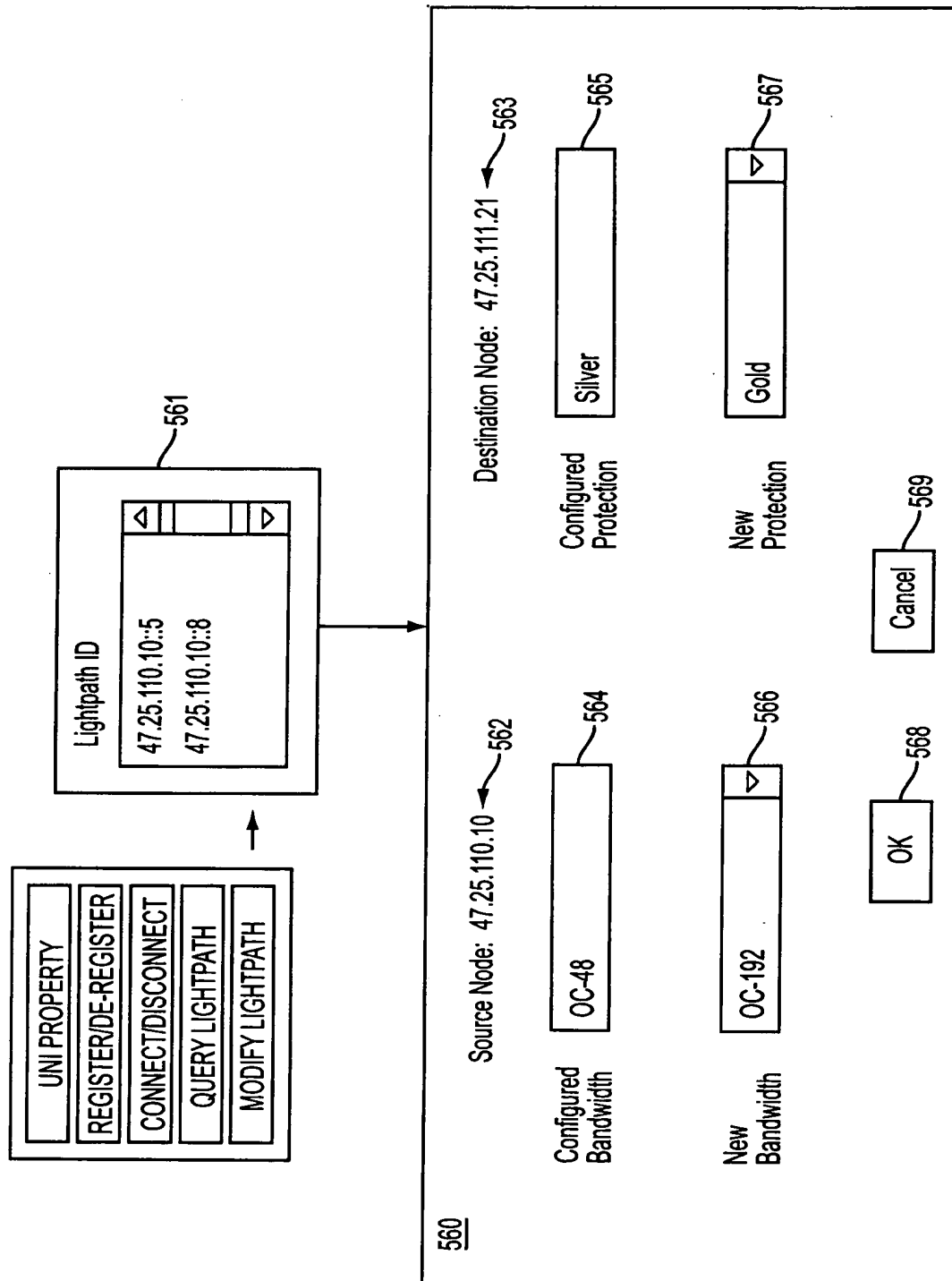


FIG. 21



"User-Constrained Optical Route Flooding
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UNI PROPERTY

REGISTER/DE-REGISTER

CONNECT/DISCONNECT

MODIFY LIGHTPATH

QUERY LIGHTPATH

581

Lightpath ID

47.25.110.10::5

47.25.110.10::8

580

Source Node: 47.25.110.10 ← 582

Destination Node: 47.25.111.21 ← 583

Bandwidth

OC-48 ← 584

Link Type

Tdm ← 586

Signaling Type

On-demand /Scheduled ← 588

Protection

Gold ← 585

Max. Delay

10ms ← 587

Connected Time

128H 37M ← 589

Starting From

Minute/hour Dd/mm/yy ← 590

Duration

Minute/hour Dd/mm/yy ← 591

OK ← 592

Cancel ← 593

FIG. 22